

SYSTEM AND METHOD FOR A DATA-INPUT ARRAY CAPABLE OF BEING
SCANNED USING A REDUCED NUMBER OF SIGNALS

ABSTRACT OF THE INVENTION

5 A system and method for scanning a data-input array
(e.g., a keyboard or keypad) using a reduced number of
signals is disclosed. Specifically, a switch array is
disclosed comprising a plurality of switches and a plurality
of input/output (I/O) lines. The switch array is arranged in
10 an $N \times N$ matrix. A plurality of N I/O lines is used to scan
the matrix. In one embodiment, the switches in the array are
arranged in an $N \times (N-1)/2$ configuration. In this
configuration, there is no duplication of circuit paths. In
another embodiment, the switches in the array are arranged in
15 an $N(N-1)$ configuration. In this configuration, a plurality
of diodes are used to identify an activated switch depending
upon which of a plurality of signal paths is activated. The
plurality of diodes is included to differentiate between
pairs of switches that complete the same paths between pairs
20 of I/O lines.

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